What is claimed is:

1   1. A communications system comprising:

2   an encoder to encode a digitized speech signal;

3   a communication link communicatively coupled to the encoder;

4   a decoder communicatively coupled to the encoder via the

5   communication link; and

6   a short term excitation enhancement circuit in communication with

7   the encoder and the decoder.

1   2. The system according to claim 1 where the decoder includes the short

2   term excitation enhancement circuit.

1   3. The system according to claim 1 where the short term excitation

2   enhancement circuit operates to improve the perceptual quality of speech data for

3   reproduction.

1   4. The system according to claim 1 where the system employs eXtended

2   code-excited linear prediction.

1   5. The system according to claim 1 where the system employs code-

2   excited linear prediction.

1   6. The system according to claim 1 where the short term excitation

2   enhancement circuit is distributed between the encoder and the decoder.

1   7. The system according to claim 1 where the short term excitation

2   enhancement circuit places at least one pulse, in addition to at least one current

3   excitation pulse, within a speech sub-frame.

1   8. The system according to claim 7 where the short term excitation

2   enhancement circuit uses a weighted excitation pulse to estimate a location of a

3   correlation peak within the speech sub-frame.

9. The system according to claim 8 where the short term excitation enhancement circuit uses the estimated location of the correlation peak to place the at least one pulse.

10. The system according to claim 1 where the short term excitation enhancement circuit performs short term excitation within a pitch lag.

11. A communications system comprising:

a short term excitation enhancement circuit that improves the perceptual quality of speech data for reproduction.

12. The system according to claim 11 where the short term excitation enhancement circuit places at least one pulse, in addition to at least one current excitation pulse, within a speech sub-frame.

13. The system according to claim 12 where the short term excitation enhancement circuit uses a weighted excitation pulse to estimate a location of a correlation peak within the speech sub-frame.

14. The system according to claim 13 where the short term excitation enhancement circuit uses the estimated location of the correlation peak to place the at least one pulse.

15. The system according to claim 11 where the short term excitation enhancement circuit performs short term excitation within a pitch lag.

16 The system according to claim 11 where the system employs eXtended code-excited linear prediction.

17. The system according to claim 11 where the system employs code-excited linear prediction.

18. The system according to claim 11 where the short term excitation enhancement circuit is included on a decoder of the communication system.

19. A method to perform excitation enhancement on speech data, the method comprising:

analyzing a coded signal; and

performing short term excitation enhancement in accordance with the analyzed coded signal.

20. The method according to claim 19 where the analyzed coded signal includes a past weighted excitation signal.

21. The method according to claim 19 where analyzing the coded signal further includes estimating a location of a correlation function within a current sub-frame.

22. The method according to claim 21 where estimating the location of the correlation function is based on a past weighted excitation signal.

23. The method according to claim 22 further comprising adding a pulse, in addition to at least one current excitation pulse, to a current sub-frame to produced an enhanced excitation signal.

24. The method according to claim 23 further comprising using the enhanced excitation signal during the reconstruction of the original speech signal.

25. The method according to claim 22 further comprising transmitting the weighted excitation signal from an encoder to a decoder via a communication link.

26. The method according to claim 19 further comprising performing code-excited linear prediction to generate the coded signal.

27. The method according to claim 19 further comprising performing eXtended code-excited linear prediction to generate the coded signal.